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The St. Lawrence Seaway
Longer Cigarettes, Less Tobacco
USDA's Meat Acceptance Service

AGRICULTURAL MARKETING SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

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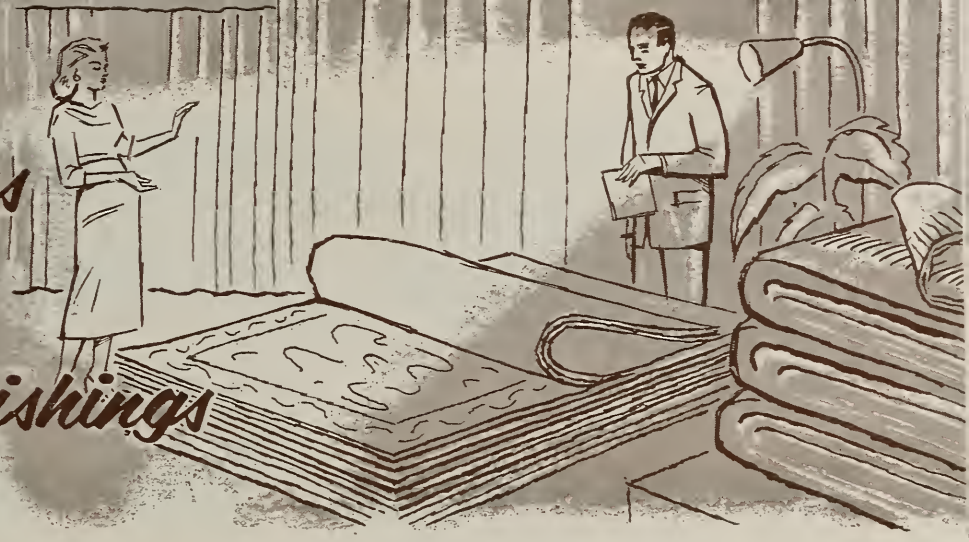
Homemakers discuss FIBERS for household furnishings



by DANIEL B. LEVINE

WHEN WOMEN take the floor to tell what they think about living room carpeting, they usually speak up in favor of wool. Whether they own wall to wall carpeting or a room size rug, wool gets the vote of 6 out of 10 homemakers.

The reason for wool's general popularity can be summed up in a single word—"durability." That was the answer given by about three-fourths of those interviewed in a recent AMS survey.

Others pointed out that wool rugs are "easy to clean." About 1 in 10 simply commented that wool rugs "look nice and are pretty"; that's why they liked them.

The survey which showed this wide use of and preference for wool floor coverings in living rooms was conducted by the Market Development Branch of AMS, who looked into nearly 3,000 homes to find out what fibers were being used for rugs, blankets, draperies, bedspreads, and table coverings.

Considered a representative sample of the country as a whole, these homemakers reported the types of furnishings they owned and the types they preferred. They also told the interviewers which fibers they owned and which they preferred for each, and what they liked about their particular choice.

The author is a project director in the Marketing Research Division of AMS.

In the survey of living room rugs, it turned out that 60 percent of the households had room size rugs; 17 percent had wall to wall carpeting; and 17 percent had only scatter rugs. For both the wall to wall and room size carpeting, wool was used extensively; cotton, however, was No. 1 for the scatter rugs.

For master bedrooms, about half the households used only scatter rugs. One in 5 had room size rugs, and 1 in 20 had wall to wall carpeting in their master bedrooms.

In fact, 70 percent of those who owned bedroom scatter rugs said they preferred only this type of bedroom floor covering.

The more popular scatter rugs were usually cotton. For this category, the statistics showed cotton was predominant—4 to 1.

Homemakers liked cotton scatter rugs mainly because they are washable. Cotton rugs look and wear well. Price was also a factor.

When it came to bed coverings, wool was easily the outstanding fiber for both regular and electric blankets. Around 50 percent listed wool and wool-blend blankets as their choice.

Warmth seemed to be the primary consideration in selecting wool blankets. But, many homemakers mentioned durability and the fact that wool blankets are "lightweight" and "warm without weight."

This desire for better sleeping comfort also influenced the 30 percent who selected cotton and cotton-blend blankets. Many of these homemakers said they preferred cotton blankets because they "don't scratch and irritate the skin." Others chose cotton because it washes easily and is less expensive.

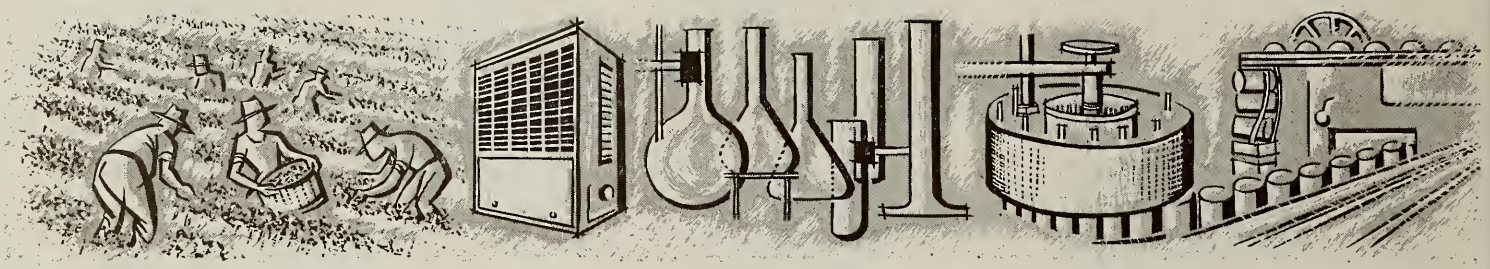
Nylon's appeal (4 percent mentioned a preference for this fiber) lay in its laundering characteristics—"it holds its shape, doesn't shrink or stretch, and it washes easily and dries quickly."

Most households used regular blankets; only 10 percent had electric blankets. About 85 percent of those interviewed said they would still choose regular blankets were they to add to their present supply.

Interestingly enough, the reasons for choosing regular blankets rather than electric dealt mostly with negative reactions toward electric blankets. About 3 in 10 persons felt electric blankets were dangerous. They were "afraid of electricity or the possibilities of fire"; they "didn't want to sleep with electricity." An additional factor, of course, was the higher cost of the electric blankets.

Those preferring electric blankets, however, gave very positive reasons. They liked the "controlled heat" and "even temperature" of electric blankets, and they pointed out the "need for less bedding."

For living room draperies, bedspreads, and table coverings, most householders lean to cotton. Forty-four percent owned cotton draperies; 98 percent reported cotton bedspreads; and 84 percent had cotton table coverings.



MARKETING BRIEFS ON

THE CHANGING MARKET

Cotton fiber testing

Three specialized cotton fiber testing instruments are now being used by the Grading Control Section of AMS's Cotton Division in Memphis to aid in maintaining uniform application of cotton quality standards in the 36 USDA classing offices.

These objective tests supplement the traditional cotton classer's art and aid in insuring a uniform level of classing.

The instruments being used include (1) the colorimeter, a device developed by the Department which mechanically and accurately measures color; (2) the micronaire, which measures the fineness or character of cotton by testing the resistance of a strand to a stream of air; and (3) the fibrograph for measuring staple length. The use of the photoelectric fibrograph for determining staple length, however, is still under study.

The farm chicken

Specialization has caught up with the farm chicken kept mainly for the eggs she lays. She usually more than meets her feed bill through egg production, but her value as a byproduct meat is fast losing out to specialized meat-type birds.

Large output of commercial broilers that sell for higher prices at the farm has encouraged egg men to leave markets for chicken meat to producers of meat types. As the value has declined for byproduct chickens used mainly in egg production, poultrymen have increased the proportion of pullets in the chicks they buy and have stretched out the egg production period for layers.

In 1957 farmers' prices for farm chickens averaged less than 14 cents per pound. Slaughter of farm chickens in 1956 totaled about 1.7 billion pounds and in 1957 was even less. More than a quarter of the total output was consumed on the farms where they were produced.

Broiler sales in 1956 were 4.3 billion pounds and in 1957 came to over 4.5 billion.

Frozen foods by rail cars

Many factors figure in the transportation of frozen fruits and vegetables by refrigerated rail cars—precooling time, air and commodity temperatures within the cars, and out-of-pocket refrigeration costs.

To get a first-hand look at how these factors compare for mechanically refrigerated cars and water-ice and salt cooled cars, AMS transportation specialists sent 3 carloads of packaged frozen corn from Waseca, Minn., to Jersey City, N.J.

Precooling tests on the two mechanically refrigerated cars showed considerable variance. One car took 7 hours to cool to 0° F; the other required 16 hours. This difference was due mainly to the refrigerating capacities of the two cars. One had twin engines; the other, a single engine.

No precooling tests were made on the car cooled by ice and salt.

During loading, the temperature of the corn shipped in the ice and salt car increased from 0° to 14.6° F. At destination, the average temperature of the corn was still 14.3°.

Temperatures in both mechanical cars, however, were below 0° upon arrival in Jersey City.

The cost of fuel for the mechanically refrigerated car with twin engines was $19.76; for the single-engine car, $15.58. At railroad tariff rates, the charges for the 17 tons of ice and 5 tons of salt used in the ice and salt car would have been $214.97. Actual costs to the railroads are not known, and other operating costs were not studied.

Further details of this study may be found in Marketing Research Report No. 182, "A Performance Test of Refrigerated Rail Cars Transporting Frozen Foods." Single copies may be obtained without charge from the Office of Information, USDA, Washington 25, D.C.

Killing weevils in wheat

High frequency radio waves can be used to kill weevils in wheat. The electrical radiation causes rapid heating throughout the grain and the insects.

In tests at the AMS Stored-Grain Insects Laboratory at Manhattan, Kans., insects were killed by dielectric heating without raising the level of the grain temperature as high as by ordinary methods.

LONGER CIGARETTES, LESS TOBACCO

by C. I. HENDRICKSON

An estimated 11 percent less domestic tobacco—flue cured, burley, and Maryland—was used for cigarettes in the 1956-57 marketing year than in the 1952-53 year.

SMOKERS seem to be buying somewhat more cigarettes now than four years ago, but they're getting less tobacco in them. The amount of domestic tobacco has dropped from 3.1 pounds to 2.8 pounds (farm sales weight) per 1,000 cigarettes.

To the man who produces and sells cigarette tobacco, this means a smaller market. An estimated 11 percent less domestic tobacco—flue-cured, burley, and Maryland—was used for cigarettes in the 1956-57 marketing year than in 1952-53.

Both the smoker and the industry have had a lot to do with this decreased use of cigarette tobacco. The current demand for filter tips and flip-top boxes has been a big factor. So has been the industry's more complete use of the tobacco leaf.

Cigarette manufacturers have found new ways of making use of more of the tobacco they buy. They are now using increased quantities of processed stems. And, they make a tobacco sheet of stems and fine particles and vary the proportion of the stemmed tobacco in the form of strips.

Previously, the tobacco in cigarettes was cut from strips of tobacco with the stems removed; some brands added a small proportion of stems. Most of the stems and fine particles, however, were used in lower priced tobacco products and byproducts.

How the volume of natural leaf tobacco going into the blend as strips (stemmed) has changed in the last few years is illustrated in the diagram below. Here you can see how the new types of cigarettes and the introduction of the sheets and additional stems have affected the volume of leaf tobacco required to fill a cigarette.

The illustrations, of course, are hypothetical. They do not represent any particular brand nor the industry average.

The figure takes as a standard the regular cigarette of 70 x 26.5 millimeters as it was in the year ending June 1953. That was when 2.2 pounds of tobacco filled 1,000 cigarettes; or, to put it differently, when 3.1 pounds of domestic tobacco (farm sales weight) was used per 1,000.

Now look what happens when the tobacco sheet or additional stems are introduced. The amount of natural leaf decreases to 86 percent. The sheet or stems accounts for 14 percent of the cigarette.

When a filter is added to our cigarette, the natural leaf content takes another dip. Even if we assume it's a king-size cigarette of 85 x 25.5 millimeters with a 15-millimeter filter, the volume of natural leaf is cut to 79 percent.

Should some king-size cigarettes adopt 20-millimeter filters, then the proportion of natural leaf would drop to 74 percent.

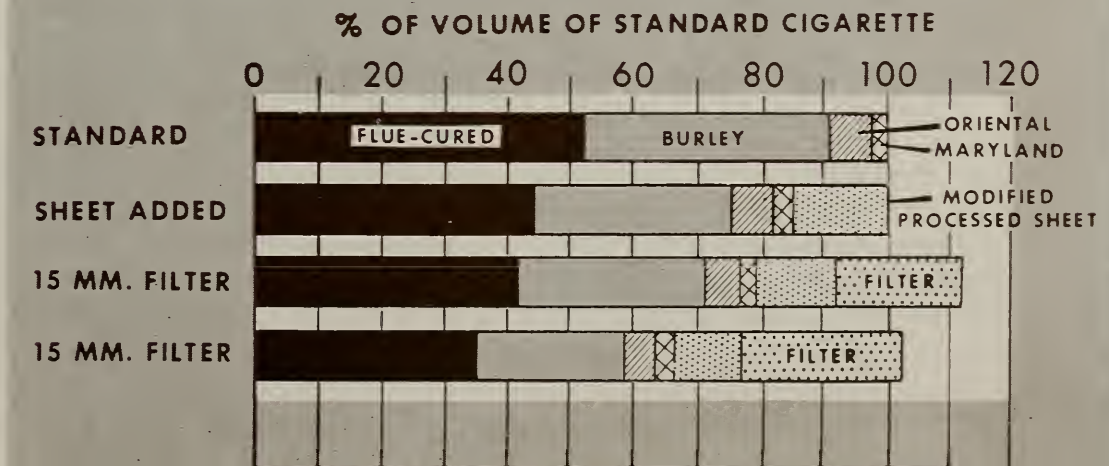
And there's still the "long" filter cigarettes, some of which measure 80 x 25 millimeters. If these have 15-millimeter filters, the natural leaf content goes down to 71 percent. If 20-millimeter filters were used, only 66 percent of the volume of the cigarette would be filled with natural leaf tobacco.

Our long cigarette, equipped with a filter and filled with 14 percent sheet and stems, now holds only 1.45 pounds of natural leaf tobacco per 1,000 cigarettes.

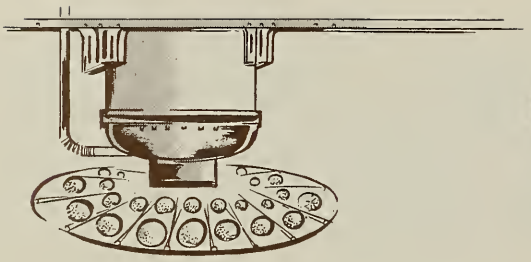
To be converted to farm sales weight, this figure would have to be adjusted for loss in weight through redrying, aging, and for loss of stems. The farm sales weight of domestic tobacco going into this cigarette would thus be about 2 pounds. It should also be remembered that 7 percent of the tobacco is imported.

PROPORTIONS OF NATURAL LEAF AND SHEET TOBACCO IN CIGARETTES

Selected by Type and Size of Cigarette for an Assumed Blend



C. I. Hendrickson is an agricultural economist in the Marketing Research Division of AMS.



U. S. ARMY TO BUILD FOOD IRRADIATION CENTER

ONE OF the most publicized uses for the atom has been in the irradiation of food. But, to date, there hasn't been a lot of large-scale experimentation on this subject. Researchers have lacked facilities large enough to treat commercial packages of produce with gamma rays.

Now, the Army is planning to build a food irradiation center at Lathrop, Calif. Construction should begin some time this year with the plant scheduled for completion by 1960.

This new facility will open the door for large-scale irradiation experiments. It will give Agricultural Marketing Service scientists an opportunity to expand their studies on irradiation as a possible means of increasing the market life of fresh fruits and vegetables.

The Lathrop irradiation center will consist primarily of a food processing plant utilizing an electronic accelerator and a gamma ray source.

With these facilities at their disposal, AMS researchers will be able to look into the possibilities of controlling stored-products insects with radiation. They also hope to continue studying the effects of gamma radiation on the control of certain postharvest diseases of fruits and vegetables. Experiments probably will be conducted on such perishable fruits as strawberries, cherries, and peaches.

The Fresno, Calif., laboratory of AMS's Biological Sciences Branch will be responsible for originating shipments for testing at the center.

Products will be brought to the facility for treatment from nearby producing areas. After radiation, the packages will be shipped to eastern markets along with nonirradiated samples. Complete temperature records will be kept enroute, and upon arrival at the market both the treated and untreated packages will be compared. Further comparisons will also be made at the market laboratories of the Branch at Chicago and New York after the products have been held for a normal market period. These tests will be conducted in cooperation with commercial shippers of fruits and vegetables and other interested agencies.

From previous tests, AMS scientists know that gamma radiation can significantly retard gray mold and rhizopus rot of strawberries. But—for strawberries as well as all other fruits and vegetables—a delicate balance exists between those dosages required to retard the development of disease and those causing visible injury to the product.

Before irradiated foods can get a clean bill of health, current feeding tests must be completed by the Surgeon General's Office, and the Food and Drug Administration must be satisfied that these foods are safe to eat.

APPLE HANDLING IN PACKING HOUSES

A NUMBER of methods are now being used to handle apples in packinghouses. Some lend themselves to the small operation, others to the big. The "right" method in the wrong plant can mean unnecessary handling costs.

If operators know which method is best for their volume of business they can, if necessary, adapt their operation to the economical method and reduce labor and equipment costs.

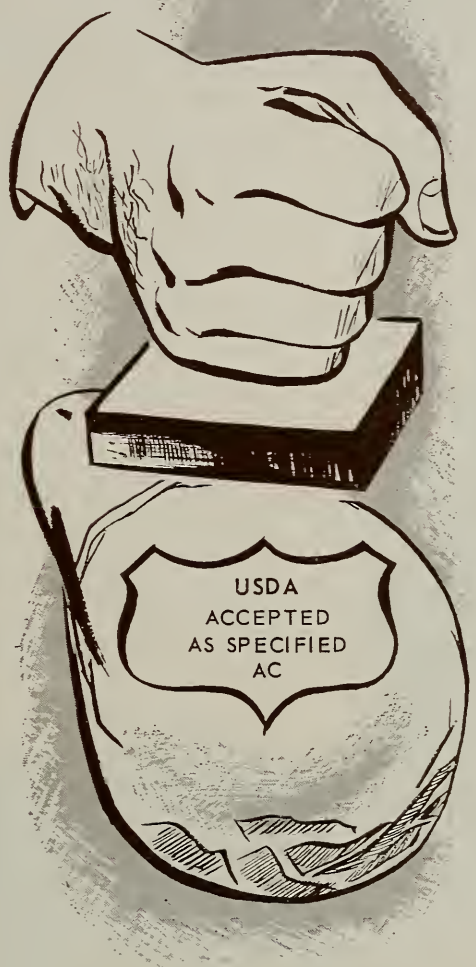
The Agricultural Marketing Service has been busy preparing such a guide. Its marketing researchers have compared 5 methods being used in 1- and 2-floor plants handling different volumes of apples.

They've found that the 36-box industrial clamp lift truck method is most economical for 1- and 2-floor plants handling 200,000 and 400,000 boxes of apples. The 48-box industrial forklift truck method is best for plants handling 100,000 boxes.

Costs for clamp-type 2-wheel hand truck methods were high compared with the lift truck methods in both 1- and 2-floor plants.

In 100,000-box plants the difference between using forklift trucks and clamp lift trucks is relatively small. Two-wheel hand trucks and belt conveyors had the highest labor cost. Clamp lift trucks and belt conveyors had the highest equipment cost. The forklift trucks followed the clamp lift truck method in the 400,000-box plants. Total costs for the forklift truck method was only 1 percent greater than the clamp lift truck method in the 200,000-box plants.

MEAT ACCEPTANCE SERVICE



by KAY NAWN

MEAT is a major item of your food budget whether you buy for 2 or 200.

But if you are engaged in large-scale food buying, your meat purchases take on added significance. Mistakes in filling an order can involve hundreds of dollars.

To assist the busy dietician, steward, or manager of large-scale feeding facilities, the Meat Grading Service of USDA's Agricultural Marketing Service offers a helpful "Acceptance Service."

Under this program, a buyer handles meat purchases by

- using written detailed specifications for each meat product wanted,
- getting competitive bids on the various items,
- awarding the contract on each item to firm offering lowest bid,
- having a Federal meat grader certify that the products the vendor offers comply with the specifications.

This program provides buyers with a business-like way of handling large-scale meat purchases and provides meat dealers with a chance to make bids on an equal basis. In addition, the buyer has the assurance that he will get the exact products he wants at the lowest possible prices—and without making a personal inspection of the meats offered.

To obtain Acceptance Service, a purchasing agent first contacts the nearest USDA meat grading supervisor. These supervisors are located in major cities throughout the country.

The buyer and the AMS supervisor then discuss the requirements for the various meat products purchased. The supervisor forwards a list of these requirements or proposed specifications to the Washington office of the Livestock Division where specialists in this type of work, review or prepare detailed specifications.

Kay Nawn is a marketing specialist in the Livestock Division of AMS.

These specifications are returned to the AMS supervisor who takes them to the purchasing agent and goes over them, making any adjustments that might be helpful. These detailed specifications, together with other general information pertaining to the purchasing program, are then usually incorporated into a procurement manual. This manual is sent out to all prospective bidders and to the meat grading offices in cities where the meat products might be purchased.

In cases where it is not possible to contact a local meat grading supervisor, a purchasing agent may obtain Acceptance Service by writing directly to the Livestock Division, in Washington, submitting a list of all the meat and meat products he uses. The specifications will be worked out and then sent to the nearest supervisor who will contact the purchasing agent and discuss them in detail.

After the procurement manual is prepared and distributed, the purchaser makes up a form listing all the items he proposes to buy during a contract period and gets bids on these items from several bidders.

After notifying the successful bidders, he prepares another list and sends it to the meat grading supervisor. This list includes specification number, name of the products, quantity to be purchased, delivery date, and names and addresses of successful bidders.

When the purchaser requests delivery of one or more meat items, the supplier notifies the nearest meat grading office and asks to have a grader come and examine the products to see if they comply with the specifications.

After the grader has selected and stamped all the meat for an order, he issues a meat grading certificate which states that he has examined the product listed for kind, class, grade, and condition at the time and date stamped. He lists the name of the product and the approximate weight. One copy of the certificate he gives to the vendor and another he sends to the purchaser.

The grader stamps either the meat itself or a sealed carton with the shield-shaped stamp which states "USDA Accepted as Specified."

It is up to the purchaser to be sure that all products delivered to him are either individually stamped or are in sealed, stamped cartons.

The St. Lawrence SEAWAY

THE CONSTRUCTION of the St. Lawrence Seaway has probably caused the most controversy along the United States-Canadian border since the War of 1812. It has also caused the most conjecture.

Up and down the Lakes, many are hailing it as the opening of another seacoast for the United States. In Chicago, city officials are forecasting an expanded economy, a boost in population, and a whole new area of industrial activity. In the Midwest, many farmers, miners, and manufacturers look upon the Seaway as the answer to their transportation problems.

Although some of these views may prove too optimistic, the new St. Lawrence waterway will certainly offer much in the way of improved transportation facilities. It will allow ocean shipping from as far inland as Duluth and Superior. It will bring cities like Cleveland, Rochester, and Buffalo closer to some major European ports than either New York or Philadelphia. And it will put the wheat belt, the dairylands of Minnesota and Wisconsin, and the corn belt of Iowa and Illinois on a direct sea route to all ports of the world.

Although distance isn't the only factor to be considered in the export picture, cutting the miles from port to port should help reduce marketing costs. To the extent that distance determines transportation costs, the Seaway will improve the competitive position of those producers located in the sweep of the St. Lawrence.

From this part of the country—from the rich farmlands lying between the Rockies and the Appalachians and north of the Ohio River—comes close to half of our country's agricultural production.

If the Midwestern farmer can ship his products directly overseas without rehandling at the Atlantic seaboard, he could save on his delivery costs and improve his marketing posi-

tion. As things are now, it costs him more to move his produce to an Atlantic port than it does to ship it across the ocean.

But whether the proposed St. Lawrence Seaway will immediately produce all the advantages hoped for may be highly doubtful. Certainly, its opening in the spring of 1959 cannot be expected to solve all the marketing problems of the industrial and agricultural midlands.

Even with the improvements now under way, the Seaway will go into operation with three major restrictions on its services. Its 27-foot channel is still not deep enough to accommodate all fully loaded ocean-going vessels. The Welland Canal, which connects Lake Erie and Lake Ontario, still creates a serious bottleneck with its 27-foot depth and one-way traffic. And the Seaway itself will be ice-locked about 4 months of the year.

The least serious of these shortcomings is the restrictive depth of the new channel around the St. Lawrence rapids. Although big ocean-type vessels won't be able to navigate the Seaway when fully loaded, about 75 percent of the ocean freighters should be able to pass down the St. Lawrence and through the Great Lakes. However, many of the ships which cannot make the trip because of their larger size will be U.S. vessels. Only about 25 percent of U.S. freighters will be able to pass fully loaded through the Seaway.

Actually, ocean-type ships could carry no more than 9,000 tons of cargo down the Seaway water route. But few ships fill to capacity. Most carry ballast or are partially filled with lightweight commodities that do not depress the ship too deep in the water.

Of much greater concern is the limited shipping season of the St. Lawrence. The Great Lakes are ice-bound about 4 months of the year. In midwinter, lake shipping stops, and exports are either stockpiled or sent Eastward by other transportation facilities.

This means that each winter, much of the Seaway's exports will be converted to rail and truck shipments. And each spring, the Seaway will have to fight to regain its competitive position as an inland carrier.

The third physical restriction on quantity shipments of U.S. agricultural products is the Welland Canal. The Welland presents the big bottleneck to St. Lawrence shipping. Because of its complicated and time-consuming system of locks, only 28 ships can pass through the Canal each day, or 14 a day in each direction.

Since World War II, Canadian grain, iron ore, and petroleum have congested shipping space on the Seaway, making it impossible for large quantities of U.S. grain to be shipped down the St. Lawrence. Intra-Seaway shipments of iron ore and petroleum are expected to increase and use much of the limited Welland Canal capacity.

Even at the present rate of U.S. grain shipments, Canadian elevator facilities at lower St. Lawrence ports are not large enough to handle all transshipments of grain. Already jammed with Canadian grain, there is hardly any additional room for current U.S. exports, much less for the anticipated increase in both U.S. and Canadian grain shipments. Thus, any increase in grain exports must be moved directly from farm or inland elevators to ocean-going ships, or more elevators must be built in the St. Lawrence area.

Despite these several disadvantages, U.S. traffic on the St. Lawrence is expected to increase with the opening of the new Seaway. Bulk agricultural products—and grains in particular—are well suited for water transport. In addition, the Seaway route would be shorter and the overall transportation charges smaller for this more direct overseas shipping.

How much cheaper the Great Lakes-St. Lawrence waterway will be for overseas shipments can, as yet, only be estimated. Conservative observers foresee a savings of at least 5 cents a bushel for grain, while the more optimistic predict 15 to 20 cents. Actually, a savings of 10 cents a bushel may be a more realistic estimate.

The outlook for domestic service—between the Great Lakes and North Atlantic coast—is not so bright. In this instance, the Seaway route is much more circuitous and only a part-time operation of about 8 months. Also, transportation costs may even exceed truck and rail charges.

Transportation specialists figure it will take an ocean-going vessel 14 days to make the trip from Chicago to Boston by way of the St. Lawrence. And for these 14 days' travel, it will cost an average of 30 cents per 100 pounds of cargo. In addition, there will be loading and unloading charges of 8.5 cents per hundredweight and local transportation fees of about 14 cents. All told, it will cost 52.5 cents per hundredweight to send a grain shipment by water to its New England market. The "proportional" rail rate would be only 48.5 cents.

From this it can be seen that the new St. Lawrence Seaway will not answer all the transportation problems of those who produce and market agricultural products. But it is an important step in that direction.

Present construction is not the end, but the beginning of a new and improved Seaway. In the years ahead, the channel may be dug to 30 feet to accommodate large ocean-going vessels. Parallel locks could be built at the Welland to allow ships to move in both directions. And it's even possible that some inventive mind may create a means of increasing the shipping season of the St. Lawrence.

RAISIN MARKETING

by N. TOWNSHEND-ZELLNER and LOYD C. MARTIN

"Imbalanced utilization" is the phrase the raisin industry uses to sum up one of its major and unique marketing problems. It is what happens when California's multi-purpose raisin grape crop floods one of its two major outlets and shorts the other.

Most of the growers of raisin variety grapes can pick their market—fresh, dried, or crushed. After selection has been made for the fresh market, the grower must decide either to dry the grapes into raisins, or truck them to a winery for crushing. Usually, 60 percent of the raisin grape crop is dried; 30 percent crushed.

Both the raisin and wine industries would benefit by a stable marketing situation in which the crop is split according to the needs of each. In marketing most agricultural commodities, such a "balanced crop utilization" comes automatically as growers sell to the more profitable of the competing market outlets.

Not so for the raisin grape industry. Here, the free play of market forces hasn't always been up to the job. The growers' decision between making raisins and selling to the winery must be made in a very short period, under the threat of an early fall deadline set by the possibility of rain damage. Once past this deadline, it is impossible to sun-dry raisin grapes.

Thus, uncertainty dominates both the demand and supply situation. The strength of the demand for raisins is not known until after the drying deadline is past. And the supply side is particularly explosive since growers, packers, and vintners don't know—until it's too late to readjust buying and selling decisions—how many raisins have been made.

As a result, the raisin industry has gone from gluts to shortages and back again, with little regard to actual marketing needs. As an extreme example, in 1946 the raisin industry processed only 47 percent of a 1.6 million ton raisin grape crop, because growers flooded the crush market in response to what proved to be overoptimistic purchasing by vintners. The next year, overloaded winery inventories led to a return in force to the raisin outlet, and raisin production increased by 60 percent as the industry dried 72 percent of a similar size crop. While grape supplies were shuttling back and forth, raisin field prices fell from $312 per ton in 1946 to $132 in 1947.

Most agricultural industries would consider the annual swings of production as burden enough on their marketing channels. The raisin industry has the added problem of its multi-purpose grape supply. Instead of ironing out production fluctuations, it actually worsens the situation.

In the last 10 years, for example, raisin production has fluctuated twice as much as raisin grape production, while marketings of raisin grapes in the commercial crush outlet have varied over 3 times as much as production.

Since the thirties, raisin grape production has been on the upswing, despite acreage cutbacks of some 14 percent. Today, a typical acre of vineyard can produce 60 percent more raisin grapes than it did at the beginning of the thirties.

While the production of raisin variety grapes has been increasing, per capita consumption of raisins averaged 1.9 pounds in 1950-54 compared to 2.4 pounds in 1935-39.

During this same period, raisin exports also declined. However, two bright spots have shown up in the export picture. Despite declining shipments, the United States has increased its share of world exports from 18 to 24 percent, while Canada has doubled its raisin purchases.

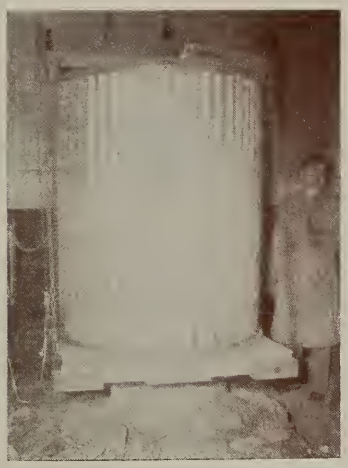
Although trade restrictions and dollar shortages have been a headache to raisin exporters, subsidy programs and assistance under P.L. 480 have tended to alleviate these problems.

But whether the raisin industry does business at home or abroad, its biggest problem is still the one of supply and demand. To help out here, Federal and State marketing programs have been inaugurated.

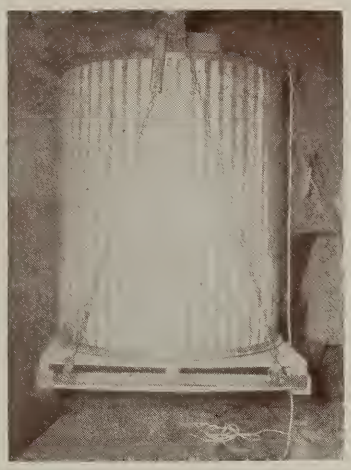
The Federal marketing program tailors each year's raisin supplies to the probable demand and places quality restrictions on marketing raisins. Excess supplies move into surplus and reserve pools. In recent years, the surplus pool has been exported. The reserve pool is released into normal trade channels if the tailored supply proves deficient—otherwise it reverts to surplus. In this way, the program is designed to stabilize the flow of raisins to markets and improve returns to growers.

The State marketing program has conducted a vigorous advertising and sales promotion campaign "to persuade more people to use more raisins more often." Behind the scenes, research in production, processing, and marketing is being carried on. A machine to grade raisins and a mechanical grape harvester are in the developmental stages and show commercial possibilities. To expand raisin consumption, researchers are working to develop an edible moisture barrier coating which will keep raisins soft in dry cereal and dry cake and cookie mixes.

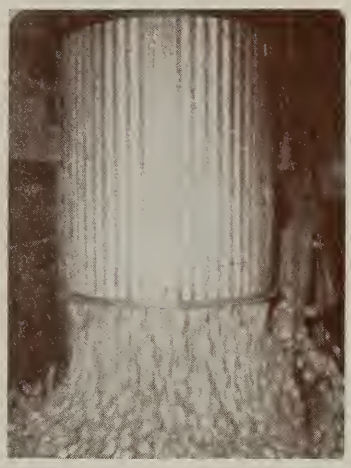
Norman Townshend-Zellner is an agricultural economist at the Berkeley, Calif., field station of the Marketing Research Division of AMS. Loyd C. Martin is Head of the Horticultural Crop Section, MRD, Washington, D. C.



Dump box has 3 main parts—pallet bottom, container, and grab.



Side view shows over-center arms at the top, chain and bar assembly.



Pallet bottom swings to the side depositing potatoes in the storage.

Empty dump box ready to be hauled up, snapped shut and refilled.

A NEW DUMP BOX FOR POTATOES

by GILBERT E. YOST

EVER try using a dump box to help reduce handling damage to potatoes being put into storage?

AMS agricultural engineers at the Red River Valley Potato Research Center, East Grand Forks, Minn., have built one that moves 1-ton loads of potatoes into storage with very little major injury.

Made of corrugated steel with a flip-open bottom, the new dump box can store bulk potatoes at below-work-floor levels with indicated injuries of less than 0.2 percent. When bin loaders, conveyors, or chutes are used, damage ranges from 1 to 8 percent.

Particularly well suited for low-level storages, the new dumper could be used to lower potatoes through floor hatches, to fill basement bins, and to build up a cone of potatoes in filling deep bins.

As designed at East Grand Forks, the box has three main parts—a pallet bottom, container wall, and grab.

Made of 29-gage corrugated steel, the container stands 54″ high and 46″ in diameter. A conventional double-faced pallet forms the bottom, making it easy to handle and stack. The grab, by which the dump box is maneuvered, consists of a main beam, chain and bar, and holding hooks.

In operating the dump box, a hoist and track are used to lower the container into the bin. Once the box is in position, the operator trips a lever; the pallet bottom swings aside; and the load of potatoes flows onto the pile.

The empty container is then raised and snapped together, ready for a refill. The box may be reloaded either in the field or from bulk trucks at the storage.

Although damage to the potatoes is almost negligible when the 1-ton dumper is used, this method requires more unloading time than conventional methods. In addition, a strong roof structure is needed to support the container with a shock load of approximately 4,000 pounds. And, presently used hatches would have to be enlarged to accommodate the bulky dump box.

Finally, only storages below the level of the drive floor can be filled successfully with the new box dumper.

To determine further advantages and limitations of dump box handling, more experimental work is necessary. Dump boxes, however, provide another possible method of handling potatoes in containers that can be used from the field through the storage period.

The author is a staff member of the Marketing Research Division, AMS. He is now stationed at Gainesville, Fla.

short items of interest

The 1958 **Acreage Marketing Guide** for summer and fall vegetables is now available from USDA or from the State Extension Service.

Marketing costs for farm-produced foods averaged 4 percent higher in 1957 than in 1956, compared with annual increases of 1 to 2 percent during the 4 preceding years. At the same time, retail prices of farm foods also went up 4 percent. The 1957 retail level, however, was still below the record annual average of 1952.

For the **5th consecutive year**, production of nonfat dry milk has exceeded its previous record.

FOOD EDITORS AND BROADCASTERS
to tell the story

RETAILERS, WHOLESALERS, AND BROKERS
to urge increased merchandising activity

LARGE-SCALE FEEDERS
to gain greater use of *plentifuls*

A USDA program for

PLENTIFUL

A record production of turkeys last year was matched by a record marketing. Here's how AMS's Plentiful Foods Program helped to move this abundance through marketing channels.

GROWERS raised a crop of 80,600,000 turkeys in 1957—more turkeys than had ever before been produced in this country. The production accomplishment was outstanding, but it posed a problem to marketers—how to sell more turkeys than had ever before been moved through marketing channels.

The turkey industry took stock of its position promptly and made plans to meet the challenge. To back up the powerful program which they planned, they quickly availed themselves of all assistance possible from the Agricultural Marketing Service.

As many other producer groups have done when faced with marketing difficulties, the turkeymen asked for the assistance of AMS's Plentiful Foods Program. The program was promptly put into action in their behalf in a way that illustrates well how it serves regularly to aid farmers.

Decision to conduct the campaign on turkeys was flashed to food tradesmen of the Food Distribution Division stationed in 16 major food marketing areas across the country. They swung quickly into action, putting to work their intimate knowledge of those markets and of the food distributors in them.

They contacted food retailers, wholesalers, and brokers—by personal calls, phone calls, and by letter—advising them of the upcoming plentiful supply of turkeys and urging them to increase their merchandising efforts by stating special features, special displays, and all the other techniques of professional food marketers. Special "fact sheets" were prepared by USDA and distributed to the trade.

These FDD food tradesmen worked also with large-scale feeders—restaurants, cafeterias, in-plant feeders and other food service operators—to get them to serve turkeys more often. To aid the food

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G. Chester Freeman is Chief of the Food Trades Branch, Food Distribution Division, Agricultural Marketing Service.

FOODS

by G. CHESTER FREEMAN

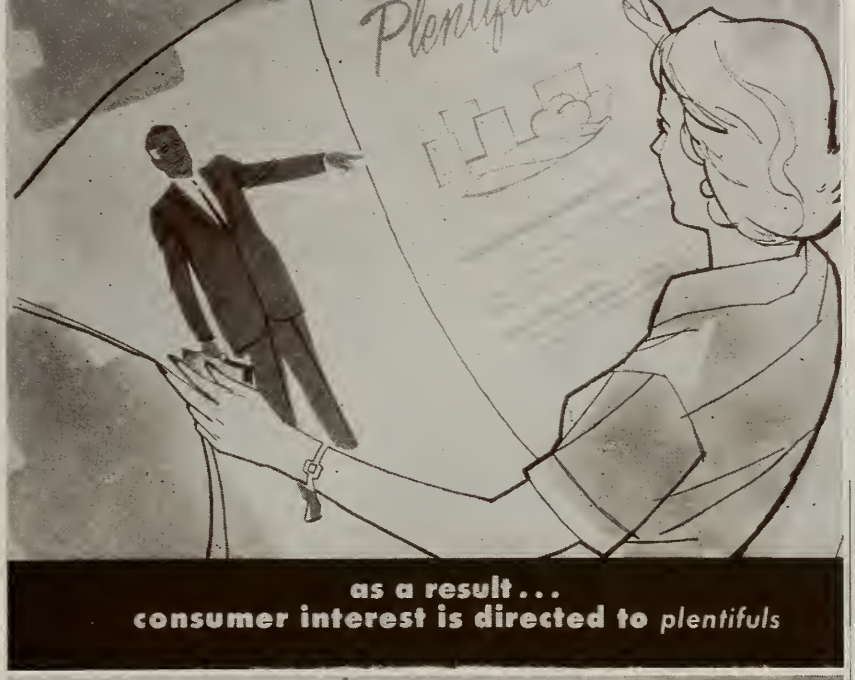
service efforts, a model merchandising plan was developed and tested successfully in USDA's cafeterias in Washington. Details of the plan, along with the recipes used in the test and pictures of the merchandising materials used, were reported to all the food service industry. Many mass feeders emulated the USDA plans, adapting them to their own operations.

One of the Nation's largest food service operations was alerted. AMS passed the word through the Federal-State channels which administer the National School Lunch Program, and turkeys appeared often in lunches in schools across the country. Huge quantities of turkeys were bought by the school lunch managers from local producers and dealers, to satisfy the hearty appetites of school children.

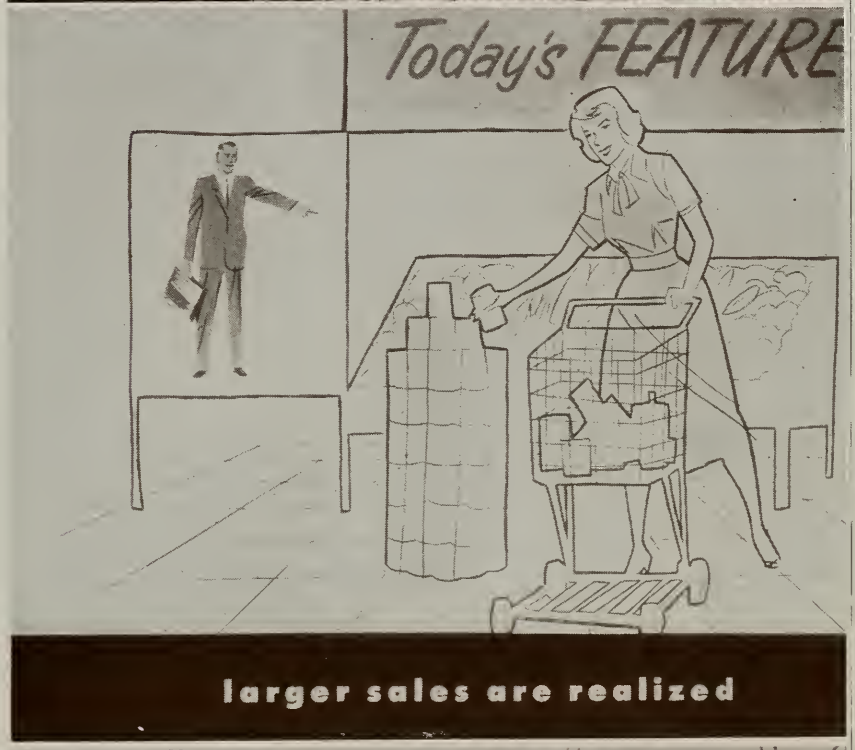
Aid of the Nation's food editors and broadcasters was enlisted, too, to help sell more turkeys. The abundance of turkeys was called to the attention of food writers for newspapers, magazines, and syndicates; women's directors for television and radio stations; and the food trade press. Materials to help them tell the story to consumers were supplied—background information, suggestions for turkey preparation and use, pictures, spot announcements for radio, slides and animated films for television.

The Department's food tradesmen received the usual willing "public service" help from all segments of the food distributive trade and from information media. Food retailers, wholesalers, brokers, large-scale feeders, food editors and broadcasters—all responded wholeheartedly to the request. Turkey producers and the poultry industry waged a hard-hitting coordinated campaign, for a notable demonstration of the type of industry-government cooperation which makes the Plentiful Foods Program an effective catalyst in moving food abundances into use through trade channels.

Dried prunes top the list of Plentiful Foods for March. Pork, eggs, dairy products, apples, canned pears, canned and frozen corn, and peanuts and peanut products are expected to be in plentiful supply during March.



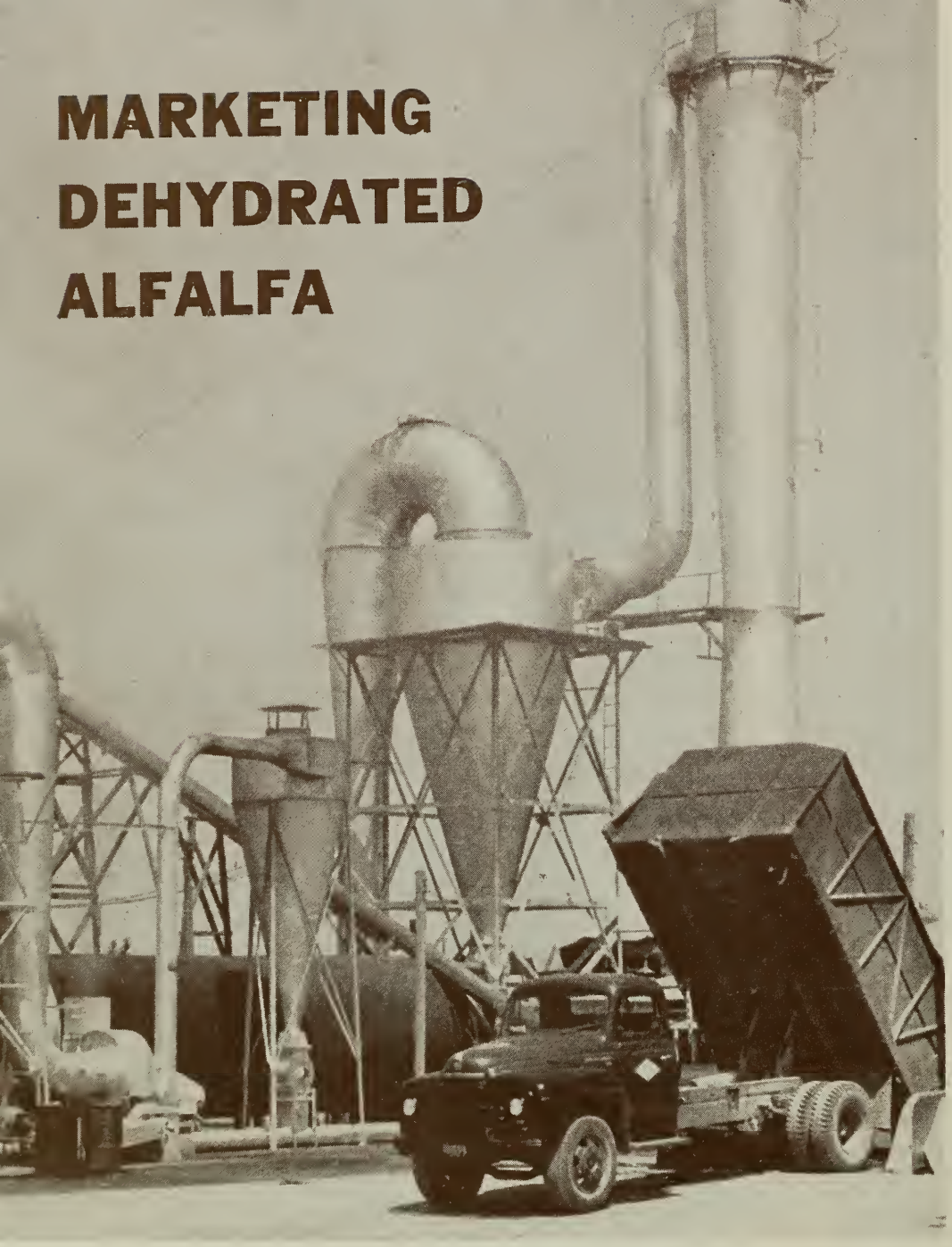
as a result . . .
consumer interest is directed to *plentifuls*



larger sales are realized

and more efficient use is made
of the Nation's farm abundance

MARKETING DEHYDRATED ALFALFA



by CARL J. VOSLOH

THE MAN who produces dehydrated alfalfa has a problem: Whether to sell in the summer as he produces the alfalfa, or to store it for sale later in the season when prices are higher.

Either way he could lose.

Price alone suggests the producer should store for later sales. For example, Kansas City prices over the last 18 years have averaged nearly 30 percent higher in the month of January than in the month of June.

But, as a recent AMS survey of the industry indicates, if the producer wants to hold out for higher prices later in the season, he may not be able to find storage space. Even if he does, he may have a discounted product on his hands. If the facilities are inadequate, dehydrated alfalfa drops sharply in quality the longer it is stored.

As a result, most producers sell directly from the plant, taking whatever price they can get.

Market researchers studied most of the 350 dehydrated alfalfa plants in the country recently as the first part of a nationwide survey of the industry. They concluded that storage is the big problem. Once obtained, there is still the matter of quality deterioration to be considered —how to keep the vitamin A content from dropping during the months of storage. And, of course, quality means cash.

Despite the headaches, dehydrated alfalfa is a booming industry. In the 1956-57 season, the industry produced over 959,000 tons of dehydrated alfalfa compared with about 230,000 tons in 1943—a jump of over 300 percent. Recent formula feed production, the major market for dehydrated alfalfa, has been roughly 34,000,000 tons a year.

While dehydrated alfalfa was increasing its production by leaps and bounds, its most direct competitor, sun-cured alfalfa, dropped from 400,000 to 184,000 tons in the same period.

Nebraska, Kansas, Colorado, and California are the biggest producers of dehydrated alfalfa, turning out about two-thirds of the national output. About one-half of all plants are located in Nebraska, Kansas, and Colorado.

The plants themselves vary in size from those able to turn out 27,400 tons to those that produce only 120 tons per year.

The price of dehydrated alfalfa is based primarily on its protein and vitamin A content—17 percent protein with 100,000 units of vitamin A per pound is the standard. The problem for the producer is how to keep the cash-value nutrients from burning themselves up while the alfalfa is in storage. If he finds a solution, he can choose a better time, and price, for selling.

Refrigeration and inert gas are two methods of storage designed to protect quality. Neither system protects the alfalfa after it leaves storage and both mean costly storage facilities. The small producer—and most of

the plants are small operations—has to sell what he can immediately and store the rest in ordinary warehouses. It's a disadvantage either way—low summer prices or a discounted product later in the season.

One answer to the storage problem would be an effective antioxidant that could be sprayed on the dried alfalfa. It would do away with the need for special storage facilities and maintain quality all the way through shipment to the final user. But some of the antioxidants have been toxic to animals, and none has been completely satisfactory to date. While operators are waiting for an effective and harmless antioxidant, they are reluctant to invest in equipment for refrigeration or inert gas storage.

But there are ways to improve quality, and, as the market researchers point out, any improvement means a better price.

For one thing, plant operators can make sure they're growing or buying the right variety of alfalfa for their area. For example, leaf spot and other diseases can reduce the nutrient content appreciably. In an experimental test for heavy leaf spot, the California Common variety contained 12.9 percent protein and 96 parts per million of carotene at harvest, while Caliverde, a leaf spot resistant variety, had 18.4 percent protein and 204 parts per million of carotene.

When it comes to harvesting, the operator has to compromise between quality and quantity. Further experiments indicated the pay-off is greatest when alfalfa is harvested during the first bloom. The protein count for the first bloom cutting was 21 percent, or only slightly less than a prebloom cutting, and the quantity was bigger.

And, in all cases, the shorter the time between cutting and dehydration, the higher the quality of the finished product. Similarly, at the other end of the process, the faster alfalfa can be cooled after dehydration the higher the quality will be. The reason is obvious. Heat—either that of the sun in the field or of the driers in the plant—helps to destroy the vitamin A content.

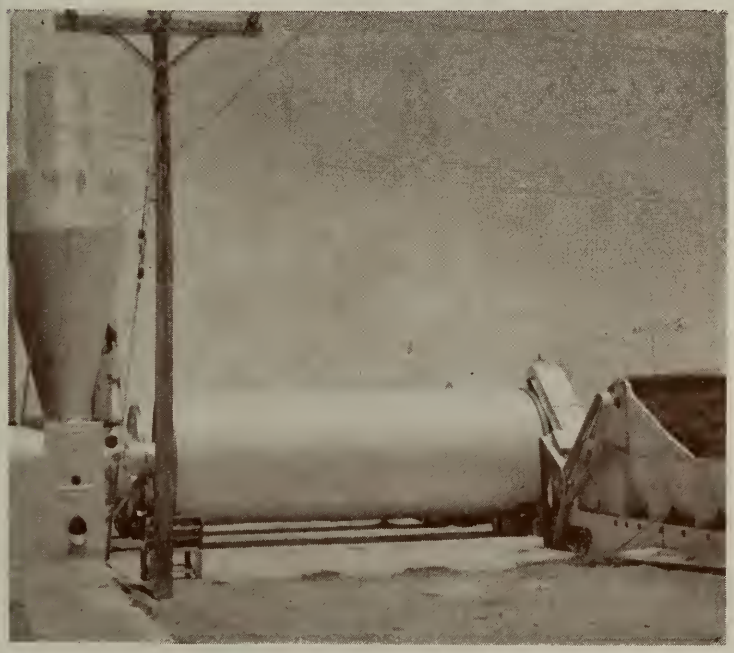
When it comes time to sell the dehydrated alfalfa, most plant operators seem to feel they have little control over the price. When surveyed by the market researchers, most of the managers indicated their prices were determined by conditions completely beyond their control.

When the operators were asked how buyers influenced their prices, most indicated there was little or no effect at all. Some few suggested that brokers beat prices down, and a few others realized that the buyers were simply in a better position to bargain than the producers. For one thing, the best market in the formula feed industry is among the bigger and better organized companies. For another, dehydrated alfalfa is merely one of many sources of necessary nutrients for the feed.

A solution to the problem of storage would leave plenty of work still for the dehydrated alfalfa industry. But it would be a big first step toward putting a rein on erratic seasonal prices.

The author is an agricultural economist in the Marketing Research Division of Agricultural Marketing Service. The story is based on contract research performed by the Kansas Agricultural Experiment Station.

Below, left, is side view of a dehydrator drum showing gas burner, exhaust "cyclone," and part of feeder. The feeder, closeup at right, provides a constant, uniform stream of chopped alfalfa to the dehydrator. Rate of feed is adjusted to moisture content, atmospheric humidity, and drum temperature.



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FARM FAMILY LEVEL OF LIVING

by ALVIN L. BERTRAND

ELECTRICITY, running water, and the automobile have brought a lot of changes to life on the farm. More and more families are taking advantage of these conveniences.

In 1956, almost all farm families had electricity and mechanical refrigeration in their homes, and three-fourths of them owned automobiles. Close to two-thirds lived in houses equipped with running water, and half of the families had telephones and television sets.

This represents a steady increase in the facilities owned by farm families since 1920, not only for the country as a whole but for every geographic region.

Since 1954, the date of the last Agricultural Census (see AGRICULTURAL MARKETING, September 1957), this trend toward better levels of living for farm families has continued. A comparison of the data reported by farm-operator families in the 1954 census and a recent national survey has shown the following increases from 1954 to 1956: Electricity, from 93 to 94 percent; telephones, from 47 to 52 percent; automobiles, from 71 to 74 percent; running water, from 59 to 64 percent; television, from 36 to 53 percent; and home freezers, from 32 to 39 percent.

Mechanical refrigerators were not included in the 1954 census but they were reported in 1950. In the 1950-56 period, refrigerators increased from 63 to 90 percent.

Level-of-living indexes are based on four items which best indicate how well American farmers are living. These are the possession of electrical service, telephones, and automobiles, and the average value of products sold and traded.

For the country as a whole, the index level for farm families rose 5 points in the period between 1954 and 1956—from 140 in 1954 to 145 in 1956 (1945=100).

Farmers in the North and West continued to lead in the possession of electrical service, telephones, automobiles, refrigerators, home freezers, washing machines, television sets, running water, and flush toilets. The level-of-living index rose from 161 to 165 points in the North Central States and from 163 to 167 in the West.

The Northeastern States, including the New England and Middle Atlantic geographic divisions plus Maryland and Delaware, had the highest levels of living. The index level for this region rose only 2 points—from 167 to 169.

The rate of improvement in farm-operator family levels of living was fastest in the South. The index here went up 6 points—from 113 to 119.

Within the South, the lowest levels of living were found in the East South Central division, and the highest levels in the West South Central. Within the Northern region, farmers in the Northeast had the highest levels and those in the East North Central the lowest. In the Western region, differences between the Mountain and Pacific areas were not great, but the Pacific area showed a larger percentage of farmers owning each item recorded, except home freezers.

In addition to regional differences, the level-of-living index varied with the tenure of the farm family, the age and education of the farm operator, and the family income. Owners enjoyed more household conveniences than renters. And, with few exceptions, farmers with the most education and the highest incomes owned more convenience items.

Age of the farm operator seemed to make a difference, too. Innovations were fewer in the homes of the youngest and the oldest groups of farm operators. The middle-age farmer was the quickest to "go modern" and buy the items that make for a better level of living.

The author is Head of the Level of Living Section, Agricultural Economics Division, AMS.

INTENTIONS TO PLANT

Would it help you in making your 1958 agricultural marketing plans if you knew what farmers intend to plant this season?

You can easily find out. Just write your State agricultural statistician for a copy of your State report on Prospective Plantings for 1958, to be issued about March 18.